

WHAT IS CLAIMED IS:

1. A rechargeable electronic device system,
comprising:

a charging device, the charging device comprising at
5 least one laser source;

a rechargeable electronic device mounted in the
charging device, the rechargeable device comprising:

a rechargeable battery; and

at least one photovoltaic receptor, the at least
10 one laser source being aligned with the at least one
photovoltaic receptor such that the at least one laser
source emits laser light to the at least one photovoltaic
receptor and the at least one photovoltaic receptor converts
the laser light to energy used to recharge the rechargeable
15 battery.

2. The rechargeable electronic device system of claim
1, wherein the rechargeable battery is at least one of a
NiCd rechargeable battery, a NiMH rechargeable battery and a
20 lithium-based rechargeable battery.

3. The rechargeable electronic device system of claim 1, wherein the at least one photovoltaic receptor is tuned to a wavelength of laser light emitted by the at least one laser source.

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4. The rechargeable electronic device system of claim 1, wherein the rechargeable electronic device comprises a battery management circuit that regulates charging of the rechargeable battery.

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5. The rechargeable electronic device system of claim 1, wherein the rechargeable electronic device comprises a DC to DC voltage regulating circuit that provides constant DC voltage to components of the rechargeable electronic device.

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6. The rechargeable electronic device system of claim 1, wherein the rechargeable electronic device is a wrist watch.

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7. The rechargeable electronic device system of claim 6, wherein the wrist watch comprises:

a watch face; and

a bezel disposed around the watch face, the at least one photovoltaic receptor being arranged on a top surface of the bezel.

5 8. The rechargeable electronic device system of claim 7, wherein the photovoltaic receptors are arranged in semicircular patterns on the top surface of the bezel.

10 9. The rechargeable electronic device system of claim 6, wherein the wrist watch includes a communication interface that communicates with other electronic devices.

15 10. The rechargeable electronic device system of claim 1, wherein the charging device comprises:
a lower base;
an upper base; and
a plurality of walls that connect the lower base to the upper base.

20 11. The rechargeable electronic device system of claim 10, wherein each of the plurality of walls comprise:
an inner wall;
an outer wall; and

a plurality of side walls that connect the inner wall to the outer wall.

12. The rechargeable electronic device system of claim 5 11, wherein the laser sources are arranged on the upper base.

13. The rechargeable electronic device system of claim 10 12, wherein the laser sources are arranged on the upper base between the inner walls and the outer walls of the plurality of walls.

14. The rechargeable electronic device system of claim 15 13, wherein the plurality of walls are opaque.

15. The rechargeable electronic device system of claim 13, wherein a gap is formed between the inner wall and the lower base of the charging device such that the rechargeable electronic device can be placed on the lower base between 20 the inner wall and the outer wall.

16. The rechargeable electronic device system of claim 15, wherein the plurality of walls align the rechargeable electronic device in the charging device such that the at

least one photovoltaic receptor of the rechargeable electronic device aligns with the at least one laser source of the charging device.

5 17. The rechargeable electronic device system of claim 1, wherein the charging device comprises a switch to activate the laser sources.

10 18. The rechargeable electronic device system of claim 17, wherein the switch automatically activates the at least one laser source when the electronic device is mounted in the charging device.

15 19. The rechargeable electronic device of claim 16, wherein the rechargeable electronic device is a wrist watch.

20 20. The rechargeable electronic device of claim 16, wherein the wrist watch comprises:

 a watch face;

 a bezel disposed around the watch face, the photovoltaic receptors being arranged on a top surface of the bezel.

21. The rechargeable electronic device of claim 20,
wherein the photovoltaic receptors are arranged in
semicircular patterns on the top of the bezel.

5 22. The rechargeable electronic device of claim 21,
wherein the laser sources are arranged in semicircular
patterns that correspond to the semicircular patterns of the
photovoltaic receptors.

10 23. A charging device, comprising:
a mounting device; and
at least one laser source that emits laser light to a
rechargeable electronic device mounted in the mounting
device.

15 24. The charging device of claim 23, wherein the
mounting device comprises:

a lower base;
an upper base; and
20 a plurality of walls that connect the lower base to the
upper base.

25. The charging device of claim 24, wherein each of the plurality of walls comprise:

an inner wall;

an outer wall; and

5 a plurality of side walls that connect the inner wall to the outer wall.

26. The charging device of claim 25, wherein the at least one laser source is disposed on the upper base.

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27. The charging device of claim 26, wherein the at least one laser source is disposed on the upper base between the inner walls and the outer walls of the plurality of walls.

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28. A rechargeable electronic device, comprising:

a rechargeable battery; and

at least one photovoltaic receptor that converts laser light emitted from a laser source into energy for recharging
20 the rechargeable battery.

29. A method for recharging a rechargeable electronic device, comprising:

aligning at least one laser source disposed on a charging device with at least one receptor arranged on the rechargeable electronic device;

emitting laser light from the at least one laser source disposed on the charging device to the at least one receptor;

converting the laser light into energy for recharging the rechargeable electronic device; and

charging the rechargeable electronic device with the energy converted from the laser light.

30. The method of claim 29, wherein the at least one receptor is a photovoltaic receptor.

31. The method of claim 29, further comprising:

modulating the laser light emitted from the at least one laser source to input data to the rechargeable electronic device through the at least one receptor.